

## REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the preceding amendments and the following remarks.

The Examiner indicates that claims 2, 7 and 28-30 would be allowable if rewritten in independent form, and that claims 40-43, which correspond to claims 2 and 28-30 rewritten in independent form, are allowed. Applicants would like to thank the Examiner for the indication of allowable subject material.

Claims 1 and 25-27 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,415,003 to Raghavan. Applicants have amended claim 1 to better define the invention.

The subject invention results from the realization that an improved communications system which can compensate for the unpredictable transfer function due to component mismatches and parasitic elements can be achieved with a calibration system which is responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of at least one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function of the transmission medium. To accomplish this, both the transmission signal and the reference signal are transmitted through the transmission medium.

The claimed calibration system for a communications system as recited in claim 1 uses a calibration circuit responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of either the transmitter or receiver circuit to compensate for variations in the transmission signal. During a calibration cycle of the claimed communication system, the transmitter circuit sends a predefined reference signal through the transmission medium. The

predefined signal is altered when the transmitter circuit transmits the signal through the transmission medium before it is received by the receiver circuit. The calibration circuit uses the digital output of the receiver circuit to adjust the reference signal level of either the transmitter or receiver circuit, such as reference signal level 28 as shown in Fig. 1 of the applicants' specification which is supplied to receiver circuit 16. *See* the Applicants' specification at page 9, lines 13-14.

In contrast to the subject invention, Raghavan fails to disclose or suggest a transmission signal and an altered reference signal transmitted from the transmitter circuit through a transmission medium as claimed by Applicants. Gain control 208, shown in Fig. 2 of Raghavan, which the Examiner alleges is a calibration circuit, compares the modulus of sample  $a_k$  from equalizer 204 with a target threshold value and adjusts the gain of amplifier 201 in response to the comparison. Raghavan fails to disclose that the target threshold value or the modulus of sample  $a_k$  is an altered reference signal from the transmitter circuit. *See* Raghavan at col. 6, line 35 to col. 7, line 32. Thus, Raghavan fails to teach, disclose or suggest Applicant's claimed transmission signal and an altered reference signal from the transmitter circuit.

On page 9, paragraph 3 of the Office Action dated July 31, 2006, the Examiner asserts that signal  $a_k$  is the transmission signal and that signal  $r_k$  is the altered reference signal. However, Raghavan discloses that "input symbol stream  $\{a_k\}$  is input to transmission channel 10" and that the "output of the channel at sample time  $k$  is then given by  $r_k$  [.]". *See* Raghavan at column 4, lines 63-64 and column 5, lines 35-37. Thus Raghavan discloses that  $a_k$  is the transmission signal before it is transmitted and  $r_k$  is the transmission signal after it is transmitted. As noted above, Raghavan fails to disclose the transmission of both a transmission signal and a reference signal as claimed by Applicants.

As shown above, Raghavan does not teach, suggest, or disclose each and every element of the applicants' invention, namely, a transmission medium for transmitting a reference signal and a transmission signal, and a calibration circuit responsive to an altered reference signal of the transmitter circuit altered by the transmission medium for adjusting the reference signal level of one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function.

Accordingly, claim 1 is patentable and allowable under 35 USC §102(e) over Raghavan. Because claims 25-27 depend from an allowable base claim, claims 25-27 are allowable under 35 USC §102(e) over Raghavan.

Claim 3 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,415,003 to Raghavan or under 35 U.S.C. §103(a) as allegedly being unpatentable in view of Raghavan; claims 4, 6, 8 and 31-34 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Raghavan in view of U.S. Patent No. 5,883,907 to Hoekstra; and claims 5 and 9 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Raghavan in view of Hoekstra, and further in view of U.S. Patent No. 6,304,594 to Salinger.

As described above, Raghavan does not teach, suggest or disclose each and every element of the invention as recited in Applicants' claim 1. Because each of the claims in these rejections depends from claim 1, they are patentable for at least the reasons stated above, and are further patentable since they include one or more additional features.

Each of the Examining Attorney's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for publication. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates collect in Waltham, Massachusetts at (781) 890-5678.

Respectfully submitted,

A handwritten signature in cursive script, reading "David W. Poirier". The signature is written in dark ink and is positioned above a horizontal line.

David W. Poirier  
Reg. No. 43,007